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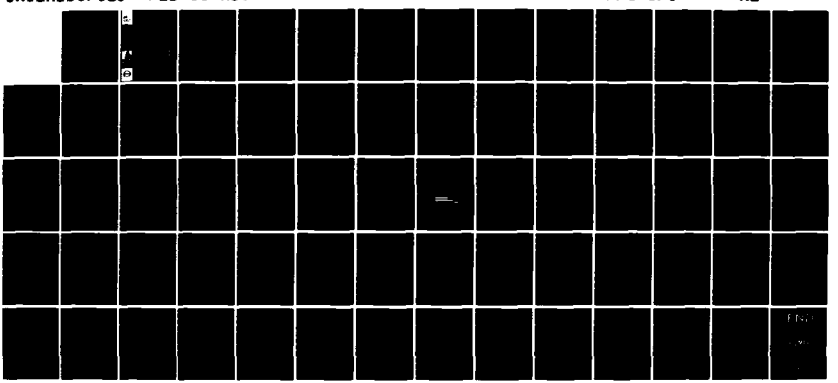

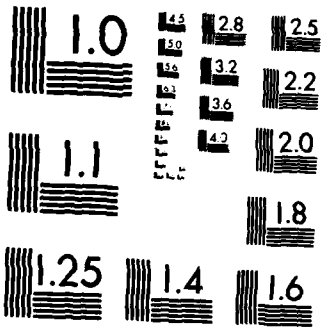

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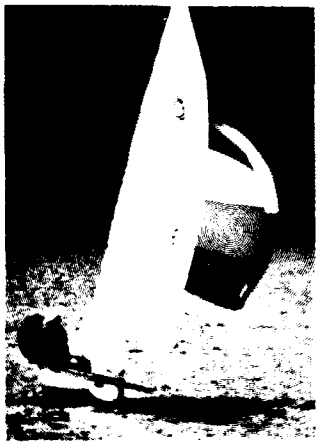

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NATURAL RESOURCES RESEARCH PROGRAM

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KEY INDICATORS OF RECREATION USE FOR 1983; PRELIMINARY FINDINGS

by

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Recreation areas and campsites at Corps of Engineers water resource projects have a large variety of natural and man-made attributes from which the camper can select. This study sought to identify, from this larger group of attributes, those which are most often preferred by the user.

Preference research usually falls into one of two categories: (a) stated preferences solicited through direct questionings, or (b) revealed preferences

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20. ABSTRACT (Continued).

documented through examination of actual behavior. Both methods were used in this study to serve not only as a validity check, but also to ensure that a full coverage of preference attributes was incorporated into the study.

Preference data for campsite and recreation area attributes were obtained from campers at five Corps of Engineers lakes. Findings across the five lakes indicated that, in general, campers select campsites based on the presence of utilities, lake view, shade, vegetative buffering, distance to lake, back-in and impact pads, and proximity and type of sanitary facilities. Additionally, preferences in recreation areas were size of the area, type and quantity of the sanitary facilities, number of showers, and presence of utilities at the campsites.

PREFACE

This report summarizes the results of the 1983 Key Indicators of Recreation Use Study. The report was completed as a part of Task III of Work Unit 31544, Measuring Key Indicators for Evaluating Impacts and Trends.

Authors of this report were Mr. Michael R. Waring and Dr. David J. Snepenger of the Resource Analysis Group (RAG), Environmental Laboratory (EL), US Army Engineer Waterways Experiment Station (WES), Vicksburg, Miss.; and Dr. James E. Fletcher and Mr. Dennis Burns of Texas A&M University, College Station, Tex. Dr. Fletcher was on temporary assignment under the terms of an Intergovernmental Personnel Act (IPA) Agreement between WES and Texas A&M University. Mr. Burns was a graduate student at Texas A&M University. Mr. Waring was Principal Investigator for the study.

Dr. Adolph J. Anderson, EL, was Program Manager at WES for the Natural Resources Research Program. The study was conducted under the general supervision of Dr. Conrad J. Kirby, Chief, Environmental Resources Division, EL, and Dr. John Harrison, Chief, EL. Ms. Nancy Tessaro, DAEN-CWO-R, was Technical Monitor.

Commander and Director of WES for the period of the study and report preparation was COL Tilford C. Creel, CE. Technical Director was Mr. F. R. Brown.

This report should be cited as follows:

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CONTENTS

CONVERSION FACTORS, US CUSTOMARY TO METRIC (SI) UNITS OF MEASUREMENT

US customary units of measurement used in this report can be converted to metric (SI) units as follows:

Multiply	By	To Obtain
feet	0.3048	metres
miles (U. S. statute)	1.609347	kilometres

KEY INDICATORS OF RECREATION USE FOR 1983, PRELIMINARY FINDINGS

PART I: INTRODUCTION

Background

1. The US Army Corps of Engineers recorded over 480 million recreation days of use at its more than 440 projects in 1982. Given such a tremendous amount of visitation, little is known about the attributes that affect visitor decisions pertaining to the selection of a project, recreation area, or specific site. Such information could be used in a number of ways. First, it could be used to better manage distribution of use. For example, modifications might be made to a low use site, such as improving the view or providing vegetative buffering, that would encourage increased use of the site. Second, knowing which attributes are most important to a particular group could greatly improve planning and design of future sites, areas, and projects. Third, indicator data could be used to minimize adverse visitor impacts when closing or consolidating sites or areas. Finally, the data could be used to develop equitable user fees. Sites or areas with a greater number of desired attributes would be valued higher than those with fewer desired attributes. It should be noted, however, that visitor preferences represent only one consideration in the Corps' ability or responsibility to provide recreation facilities. Any of the possibilities listed above must be examined in light of management, manpower, and budget opportunities and constraints.

Objectives

2. A study was initiated by the US Army Engineer Waterways Experiment Station (WES) in 1982 to determine these attributes at Corps water resources projects. Three primary objectives were established for the study:

a. Identify indicators of recreation use patterns.

b. Develop techniques for collecting data on these indicators.

c. Develop guidelines for using indicators to predict and manage use patterns.

While this study is applicable to both day use and camping areas, the major emphasis was on camping areas due to the larger investment required to provide such facilities. The study addressed indicators for both site and recreation area use.

3. A total of 27 recreation areas at six Corps of Engineers lakes were selected for the study (Figure 1). However, Lake Barkley was excluded from this report because a portion of the data was not received in time for analysis. Lake Barkley will be included in future analyses for an instructional report on how to determine and use key indicators at other projects.

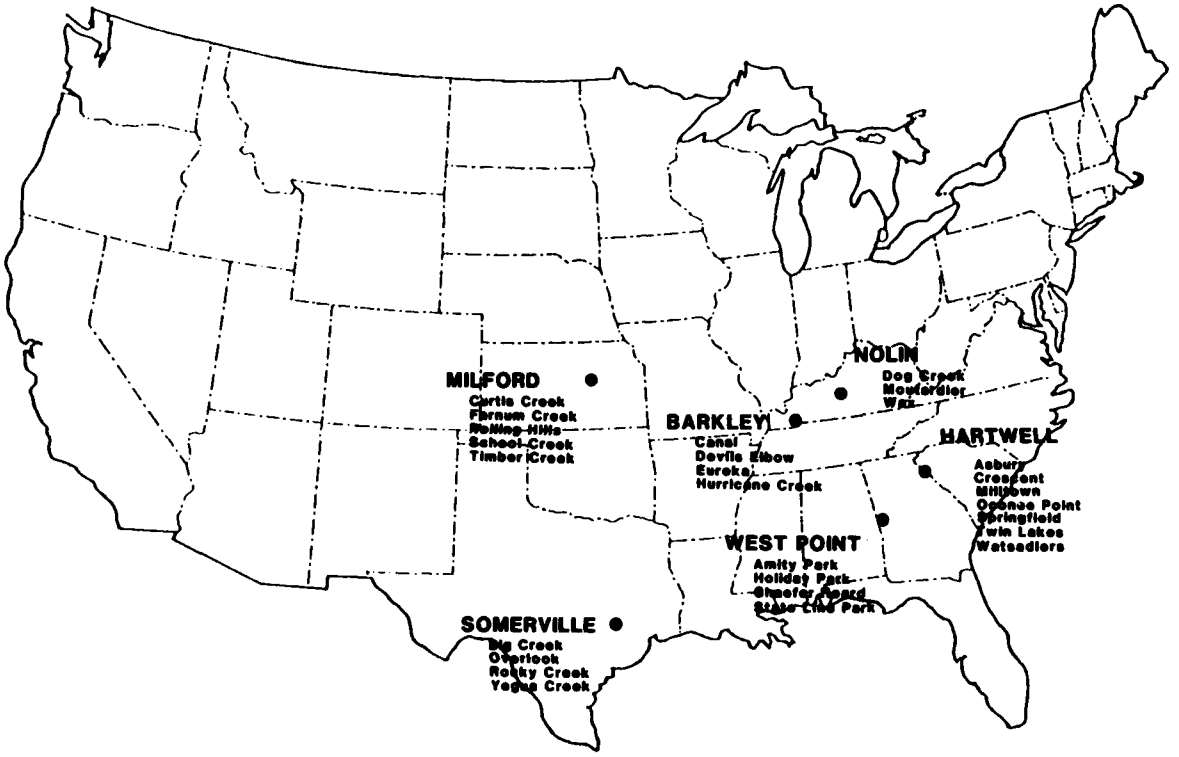

Figure 1. Lakes and recreation areas in the study

4. Both revealed and stated preferences for various attributes were examined in this study. Revealed preferences were obtained from two data sources and were considered the primary data base for the study. Stated preference data were obtained through interviews at the same lakes and provided a validity check on the revealed preferences.

5. This report presents the technical findings from data collected during the summer of 1983 and is divided into four major sections: Introduction,

Revealed Preferences, Stated Preferences, and Discussion. A subsequent report will address a methodology for determining project-specific indicators and how to use these data to predict use patterns.

Literature Review

6. Two separate literature reviews were conducted: one for the site level, and one for the project/area level. The site level review produced a minimum number of applicable sources, most of which were completed in the early 1970's and identified a wide range of attributes. Van Horne (1976) used distance to lake, distance to sanitary facility, and slope to determine user preferences for campsites. Additionally, he used pad type, offsite views, spatial buffering, canopy type, and shade potential to further describe these preferences. Lime (1971) found that the best predictors of use distribution at 34 campgrounds in Superior National Forest (Minnesota) were: (a) fishing quality, (b) coniferous trees, (c) deep water offshore, (d) cliffs, and (e) rock outcrops. Lucas (1970) discovered that the type of water body on which the campground was located influenced use patterns. Cordell and James (1972) studied visitors to a Southern Appalachian campground. The most important characteristics for determining use were location of the comfort station and water hydrant with respect to the site, amount of shading, and amount of understory vegetation. Canoeists showed a strong preference for islands and campsites in pine stands in a study by Frissell and Duncan (1965). Distance and vegetative screening between adjacent sites were important factors for visitor satisfaction in a study by Foster and Jackson (1979) on Alberta campgrounds. Shafer and Burke (1965) measured visitor preferences for beaches, fireplaces, sanitary facilities, and spacing between sites.

7. Tate and Hammitt (1983) prepared an annotated bibliography of project/area level indicators as a part of this study. The most relevant of these sources were later reviewed for key factors that influence selection of recreation areas and projects and for methodologies that might be adapted to this study. Based on the literature review, Tate and Hammitt concluded that an understanding of recreation use patterns requires a careful assessment of what visitors say they want in addition to what they actually use, an

awareness of trends, and a knowledge of other areas that can serve the needs of the visitor.

Key Terms

8. Key terms used in this report are defined below:

   a. Attributes - All physical and man-made characteristics of a site or recreation area that might influence a visitor to select that site or area. Attributes are synonymous with factors and amenities.

   b. Indicators - Those attributes of a site or recreation area that were statistically related to visitor choice in this study.

   c. Key Indicators - Those indicators that are highly significant and explain the greatest amount of variance at a particular site or recreation area.

   d. SMSA - Standard Metropolitan Statistical Area.

   e. Variables - Attributes or indicators when used in a regression equation.

PART II: REVEALED PREFERENCES

Methods

9. Two data sets were combined into a larger data base to analyze revealed preferences. The first data set provided information on camper use of specific campsites and recreation areas within the five projects. These data are part of the Campground Receipt Study (CRS).* The other data set included information on campsite and recreation area attributes. The two data sets were combined to conduct multiple regression analyses with user behavior as the dependent variable and campsite attributes as the independent variables.

10. The CRS data set provided the information for the dependent variable. It gave a census of site occupation from 1 June to 1 September for all fee campsites. Besides containing information on nights spent at specific campsites, information was also included on camping and recreational equipment used.

11. Campers were partitioned into types based on their camping equipment and presence or absence of a boat. After trying several approaches for grouping the campers into types, six camping types emerged. Table 1 lists the six types and the number of nights occupied by equipment type at the five lakes under study. When campers had multiple types of camping equipment, they were put into the category of their most developed type. For example, campers with a van and a tent were placed in the van category.

12. Other approaches to classification included separating campers with prior visits to the project from those with no prior visits and campers with Golden Age passports from those without. However, there were no significant differences between the preferences of these groups and those shown in Table 1. Nights occupied were summed for each campsite by equipment type.

13. The analysis of campsite attributes consisted of running stepwise regressions for each camping type at each lake. Analysis was not undertaken

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* The CRS is an ongoing study being conducted by WES. Data from this study are collected from registration records in fee campgrounds at 15 Corps projects (presently) and used as the baseline for a number of research projects. The data are also used to produce a yearly report on trends in equipment types, origin of use, etc.

Table 1

Number of Nights Camping By Camper Type At Selected Lakes

Camper Type	Lake					
	Hartwell	Milford	Nolin	Somerville	West Point	All Lakes
Tenters with boat	2,824	756	732	1,726	1,135	7,173
Tenters without boat	2,101	395	727	2,473	1,369	7,065
Pop-up trailer, pickup camper, and/or van with boat	2,267	808	484	2,921	1,227	7,707
Pop-up trailer, pickup camper, and/or van without boat	2,245	571	563	2,292	1,696	7,367
Travel trailer and/or motor home with boat	2,897	1,232	137	2,606	3,035	9,907
Travel trailer and/or motor home without boat	2,083	1,129	166	2,034	3,739	9,151
Total	14,417	4,891	2,809	14,052	12,201	48,370

for all campers collectively because the preferences of tenters differed significantly from those of nontenters, causing the regression results to vary with the proportion of tenters to nontenters. Table 2 shows the results of an intercorrelation matrix run for West Point Lake to discern this degree of independence in the preferences of the six camper types. Note that 9 of the 15 correlations are not significant. The strongest correlation was between tenters with a boat and tenters without a boat. When squared, however, the common variance between these two was less than 6 percent. It was therefore concluded that there were six distinct camper types.

14. Data on the independent variables for both the campsite and recreation area portions of the study were obtained using the forms shown in Appendix A. The independent variables were selected based on a review of the literature, observation, and field testing. Furthermore, degree of objectivity and applicability to potential field use played a role in the choice of

Table 2

Pearson Correlations For Campsite Occupancy Among Camper Types At West Point Lake

Camper Type	Tenters With Boat	Tenters Without Boat	Pop-up, Pickup, Van With Boat	Pop-up, Pickup, Van Without Boat	Travel Trailer and/or Motor Home With Boat	Travel Trailer and/or Motor Home Without Boat
Tenters with boat	1.00	0.241*	0.099	0.058	-0.162	-0.076
Tenters without boat		1.00	-0.022	-0.108	-0.028	-0.192
Pop-up, pickup, van with boat			1.00	0.206*	0.196*	0.204*
Pop-up, pickup, van without boat				1.00	0.047	0.189
Travel trailer and/or motor home with boat					1.00	0.226*
Travel trailer and/or motor home without boat						1.00

* Positively correlated and significant at alpha = 0.05.

attributes to study. Of the total attributes on which data were collected, the following were selected for analysis:

Site Level	Area Level
Utilities	Day use
Impact pad	Distance to SMSA
Tent pad	Signage
Back-in pad	Camping fees
Pull-out pad	Number of campsites
Pull-through pad	Water flush toilets
Table cover	Vault toilets
Erosion	Other toilets
Slope	All toilets combined
Lake view	Showers
Land view	Dump station
Spatial buffer	Playground
Vegetative buffer	Boat lanes
Topographic buffer	Shade
Canopy	Campsite utilities
Shade potential	
Understory	
Distance to lake	
Distance to sanitary facility	
Type of sanitary facility	
Lines of obstacles to lake	
Lines of obstacles to sanitary facility	

Operational definitions of these attributes and ranges of values at the five study lakes are contained in Appendix B.

15. Data were collected on these attributes by two researchers at all 27 recreation areas shown in Figure 1. The degree of reliability between observers recording field data onsite and area attributes was continuously checked at each project. The reliability results were very high; each observer scored the attributes of a particular site or area in essentially the same manner.

16. Identifying the campsite attributes preferred by campers at Corps facilities required a two-stage statistical procedure. The procedure adopted was outlined by Field and Armenakis (1974) and employed in leisure research by Snepenger (1982) and Snepenger and Crompton (1984). In the first stage of the analysis, several hundred inferential statistical models were undertaken to evaluate the predictive validity of the 22 campsite attributes. Appendix C contains additional discussion on the reasons for selecting this statistical procedure for the study.

17. The stepwise regression technique contained in the Statistical Analysis System (SAS) was used. An alpha level of 0.05* was adopted for both entry and exit critical values, thus reducing the possibility of weak variables entering the equations. This alpha level was used for all statistical procedures throughout the study. Replications of the same models were conducted for each of the five sample projects. This gave an opportunity for meaningful variables to emerge from the campsite preference analysis by incorporating external validity to the study.

18. To discern which attributes contributed to campsite selection, a total of 330 separate stepwise regressions were run. First, separate regressions were run across each of the six camper types and 23 recreation areas within the five study areas. These 138 (23 × 6) models indicated the importance of utilities in making a site selection. To understand how other attributes contributed to campsite selection once the utility/no utility decision had been made, two other sets of regressions were run. The first set of regressions attempted to determine those campsite attributes used by campers at sites without utilities. This analysis consisted of 120 regression equation (6 camper types × 20 recreation areas that contained campsites without utilities).

19. A similiar analysis was performed to determine how campers select a site from among those with utilities. There were 12 recreation areas containing sites with utilities, resulting in 72 (6 × 12) regressions in this analysis. The regression equations excluded utilities as a variable (in effect, they were held constant as they were assumed to be the most important

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* An alpha level of 0.05 indicates that there is a risk of reaching a false conclusion 5 out of 100 times.

selection attribute). All campsites without utilities were also excluded from this analysis.

20. After the stepwise regression models were run, each of the 22 variables was then evaluated across all projects. This second stage of the analysis presented a methodological problem. The use of multiple tests of significance may lead to the wrong conclusions because they may suggest that an attribute is an important predictor, when in fact the results are simply due to the number of tests run.*

21. Following the analysis of campsite preferences, preferences were analyzed at the recreation area level for the same five lakes. It should be noted that the unit of analysis shifted from the site to the recreation area, resulting in a very small sample size (Hartwell had seven areas; Milford, three; Nolin, three; Somerville, four; and West Point, four). Given these small samples, only bivariate models were tested using Pearson correlations. The total number of nights the area was occupied was used as the dependent variable while the recreation area factors listed in paragraph 14 were used as the independent variables. The camper classification used for the site analysis was also used for the area analysis.

22. A two-stage analysis procedure was again used for the area analysis. The first stage consisted of 450 simple correlations (5 lakes × 6 camping

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* Under conditions of repeated tests of significance, it is necessary to determine whether the number of "significant" items is sufficiently large enough to indicate a nonchance occurrence. An upper bound on the estimates of the experiment-wise error rate can be calculated by the following formula:

$$\text{Experiment-wise error rate} = 1 - (1 - a)^k \qquad (1)$$

where

a = the level of significance
k = the number of tests of significance

As the equation shows, the probability of finding variables related to campsite selection increases as the number of independent significance tests increases. The method presented by Field and Armenakis (1974) provided an upper bound for the experiment-wise error rate. Their multiple test of significance procedure compares the observed number of significant findings for an attribute with the probability distribution based on chance. It provided an objective means for analyzing the results for each camping factor.

types × 15 area attributes) to discern significant relationships. In the second stage of the procedure, a multiple test of significance was used as the criterion to determine when an attribute was related to recreation area selection across the five lakes. For an attribute to the significantly related, two or more of the five correlations (one for each lake) had to be significant.

Results

23. The results of the 330 regression equations are recorded in the 15 figures in Appendix D. Table 3 highlights the findings from Figures D1-D5 on preferences for campsites when all sites are considered simultaneously (i.e., those with and without utilities). The number of times a variable is significant within a regression across the five projects is displayed by camper type. For example, tenters with a boat were significantly influenced by the utilities variable in six of the equations.

Table 3

Number of Times a Variable Was Significant for All Campsites

CAMPER TYPE	CAMPSITE ATTRIBUTE																					
	IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC	UTILITIES
TENTERS WITH BOATS	2	0	2	0	1	0	0	1	6*	2	2	2	1	5*	5*	0	1	3	4	3	5*	6*
TENTERS WITHOUT BOATS	2	1	5*	0	1	0	1	1	7*	0	0	1	1	2	5*	0	1	1	4*	1	7*	6*
POP-UP-PICKUP-VAN WITH BOATS	3	0	0	0	0	2	2	2	12*	1	2	2	2	4	4	1	1	1	6*	4*	2	4*
POP-UP-PICKUP-VAN WITHOUT BOATS	4*	0	0	0	0	0	0	1	5*	0	3	1	0	3	3	0	1	1	2	2	2	5*
MOTOR HOME-TRAVEL TRAILER WITH BOATS	2	0	4*	0	0	0	1	0	8*	0	2	3	1	1	3	1	1	1	4*	3	2	9*
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	2	1	2	1	1	0	1	0	6*	1	1	4*	0	2	6*	2	2	1	4*	2	1	10*

* SIGNIFICANT USING THE MULTIPLE TEST OF SIGNIFICANCE AT ALPHA 0.05

24. Tables 4 and 5 summarize the preferences for the factors when only campsites without utilities and campsites with utilities, respectively, are considered. They are interpreted in the same manner as Table 3.

Table 4

Number of Times a Variable Was Significant for Campsites Without Utilities

CAMPER TYPE	CAMPSITE ATTRIBUTE																				
	IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY*	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC
TENTERS WITH BOATS	0	0	1	0	0	1	0	2	7*	0	2	2	0	2	5*	1	2	4*	1	4*	3
TENTERS WITHOUT BOATS	0	1	4*	0	1	0	1	0	5*	0	2	1	1	1	2	0	0	1	1	4*	6*
POP-UP-PICKUP-VAN WITH BOATS	1	0	1	1	0	0	2	0	7*	0	1	2	1	3	4*	1	1	2	4*	1	4*
POP-UP-PICKUP-VAN WITHOUT BOATS	1	2	2	0	0	1	0	1	6*	0	1	2	0	2	4*	0	0	2	0	4*	4*
MOTOR HOME-TRAVEL TRAILER WITH BOATS	0	2	1	0	0	1	0	1	6*	0	1	2	0	1	1	0	1	0	4*	4*	1
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	0	1	3	1	0	1	1	0	6*	0	2	1	0	2	6*	0	0	1	4*	0	2

* SIGNIFICANT USING THE MULTIPLE TEST OF SIGNIFICANCE AT ALPHA = 0.05

Table 5

Number of Times a Variable Was Significant for Campsites With Utilities

CAMPER TYPE	CAMPSITE ATTRIBUTE																				
	IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC
TENTERS WITH BOATS	0	0	1	0	0	0	0	0	3*	0	1	0	1	6*	0	0	1	1	0	0	2
TENTERS WITHOUT BOATS	0	0	3*	0	0	0	0	0	1	0	1	0	0	4*	3*	0	2	1	1	1	1
POP-UP-PICKUP-VAN WITH BOATS	0	1	2	0	0	0	1	0	3*	0	1	1	1	2	1	2	1	3*	2	1	0
POP-UP-PICKUP-VAN WITHOUT BOATS	1	1	2	0	0	1	1	0	3*	0	1	1	0	3*	0	1	0	2	3*	0	1
MOTOR HOME-TRAVEL TRAILER WITH BOATS	0	2	0	0	0	0	0	0	5*	0	0	1	0	3*	2	2	0	0	3*	1	1
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	1	2	0	0	0	0	0	0	2	0	0	1	1	1	2	0	2	2	1	2	2

* SIGNIFICANT USING THE MULTIPLE TEST OF SIGNIFICANCE AT ALPHA = 0.05

25. Revealed preferences for campsite attributes are listed for all campsites, campsites without utilities, and campsites with utilities. All six camper types utilized multiple attributes in making a campsite selection with campsite amenities, physical environment, and sanitary facilities all playing a role. Tenters with a boat prefer sites without utilities that have a view of the lake, shade, canopy, and are relatively close to the lake. Furthermore, they prefer more highly developed sanitary facilities, which are close to the campsite, and have no obstructions between the campsite and the sanitary facility. Tenters without a boat are attracted to sites without utilities that have a view of the lake, back-in pad, more highly developed sanitary facilities close to the site, shade, canopy, and clear lines of access to the sanitary facilities. Campers with boats and pop-ups, pickups, or vans want utilities, a view of the lake, shade, canopy, more highly developed sanitary facilities close to the site, few obstructions between the site and the sanitary facilities, and closeness to the lake. Those campers with pop-up, pickup, or van camping equipment but without a boat want sites with the same attributes that are not as close to the lake.

26. Table 6 shows the results of the recreation area analysis. Recreation area occupancy among tenters with a boat was directly correlated with the number of campsites and sanitary facilities in the recreation area. Tenters without a boat selected recreation areas with more campsites, vault toilets, showers, and campsite utilities. In contrast, pop-up trailer, pickup, and van campers with or without boats appeared to be less discriminating in their choice of recreation areas. The only attribute significant to this group was the "all types of toilets" variable. Travel trailer and motor home campers with a boat preferred recreation areas with more showers and with campsite utilities. There were no significant attributes for those campers using travel trailers or motor homes who did not have a boat.

27. As a whole, the findings suggest that Corps campers select among recreation areas based on the number of campsites, type and quantity of sanitary facilities, number of showers, and presence of campsite utilities. Attributes which do not appear to play a role in recreation area selection include the presence of a day use area, signage, fees, presence of a dump station, number of boat lanes, amount of shade, and presence of a playground.

Table 6

Number of Times an Attribute Was Significant at Recreation Areas

CAMPER TYPE	RECREATION AREA ATTRIBUTE															
	DAY USE	DISTANCE TO SMSA	SIGNAGE	CAMPING FEES	NUMBER OF CAMPSITES	WATERFLUSH TOILETS	VAULT TOILETS	OTHER TOILETS	ALL TOILETS	SHOWERS	DUMP STATION	PLAYGROUND	BOAT LANES	SHADE	UTILITIES
TENTERS WITH BOATS	0	0	0	1	4*	0	0	1	2*	1	0	0	0	0	0
TENTERS WITHOUT BOATS	0	0	1	0	2*	2*	0	0	0	2*	0	0	0	0	2*
POP-UP-PICKUP-VAN WITH BOATS	0	0	1	0	1	0	0	0	1	0	0	0	0	1	0
POP-UP-PICKUP-VAN WITHOUT BOATS	0	0	0	0	0	0	0	1	2*	1	0	1	0	0	1
MOTOR HOME-TRAVEL TRAILER WITH BOATS	0	0	0	1	0	1	0	1	1	2*	0	0	0	0	2*
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1

* SIGNIFICANT USING THE MULTIPLE TEST OF SIGNIFICANCE AT ALPHA = 0.05

PART III: STATED PREFERENCES

Methods

28. Data on visitor (stated) preferences were collected via a questionnaire (Appendix E). It was administered during the summer of 1983 to visitors at the same six study sites used for the revealed preferences. The survey period was divided into twelve 1-week segments. Surveys were conducted at each study site for 1 week during the first half of the summer and for 1 week during the second half.

29. Questionnaires were administered by contacting recreation area visitors at their campsite, briefly explaining the purpose of the questionnaire and details on its completion, and requesting that one of the adult campers complete the questionnaire. Each camper was told that one of the survey personnel would return to the campsite in a short time to answer any questions and to pick up the survey form. A summary of the number of campers who completed surveys and the response rates at each study site is shown in Table 7.

Table 7

Respondents and Response Rates by Study Sites

Reservoir	Absolute Frequency	Relative Frequency, %	Response Rate, %
Milford	136	8.6	79
Hartwell	310	19.7	74
West Point	240	15.2	75
Barkley	238	15.1	85
Nolin	269	17.1	73
Somerville	383	24.3	81
	1576	100.0	79

30. Data collected on the camper questionnaire were coded into a computer file for analysis. The first step in the analysis was to compile a frequency distribution of response for each questionnaire item. Frequency counts were completed for campers at all study sites combined, then completed for

campers at each study site in order to better determine similarities and differences in response patterns between study sites.

Results

31. Approximately 68 percent of the campers were found to have arrived at their campsites in the afternoon or night, while 32 percent arrived in the morning. Almost 81 percent of the visitors lived within 100 miles* of the recreation area they were in, while 19 percent lived more than 100 miles from the area. Since a 100-mile drive takes about 2 hr to complete, this may indicate that many campers drive to a Corps recreation area after getting off work, particularly for weekend outings. This also indicates that the primary market area for campgrounds in this study is within a 100-mile radius of the project.

32. Approximately 86 percent of the 1576 survey respondents indicated that they had made one or more previous visits to the lake where they were surveyed. When visitors were asked if the site that they occupied was their first, second, or third (or greater) choice, 47.5 percent indicated that it was their first choice, 29.8 percent said it was their second choice, and 22.1 percent said it was their third or greater choice. This indicates that about half of the campers were able to get their preferred campsite. However, this alone does not indicate how well the site satisfied their expectations regarding services and attributes.

33. Data from this survey indicated that Corps campers are largely family groups (38 percent). An additional 15 percent of the campers surveyed indicated they were a group of families and 20.2 percent said their group could best be described as a couple. Only 8.4 percent indicated their group could be described as a group of friends (Table 8).

34. When campers were asked about the principal types of camping equipment they were using, it was found that 34.5 percent were using tents. Relatively few campers used vans (6.3 percent) or pickups (8.5 percent). About 25.8 percent used travel trailers on their trip while motor homes were used by 13.8 percent and pop-ups by 11.1 percent of the respondents.

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* A table of factors for converting US customary units of measurement to metric (SI) is presented on page 3.

Table 8

Frequencies by Group Type

Group Type	Absolute Frequency	Relative Frequency, %
Alone	13	0.8
Couple	317	20.2
Family	600	38.2
Group of families	236	15.0
Group of friends	132	8.4
Group of families and friends	236	15.0
Organization	21	1.3
Other	16	1.0
TOTAL	1571	100.0

35. In the case of multiple equipment types (11.2 percent of the respondents), only the first response (in order of appearance on the questionnaire - van, tent, travel trailer, motor home, pop-up, pickup) was recorded. This could have biased the results in the favor or the first three categories. However, this bias would be very small due to the small number of cases. Table 9 shows the frequencies by equipment type.

Table 9

Frequencies by Equipment Type

Equipment Type	Absolute Frequency	Relative Frequency, %
Van	98	6.3
Tent	539	34.5
Travel trailer	404	25.8
Motor home	215	13.8
Pop-up	174	11.1
Pickup	133	8.5
TOTAL	1563	100.0

36. Campers were asked if this lake was the main destination of their trip; more than 93 percent of the respondents indicated that it was. The mean length of stay was found to be 4.5 nights with 2 nights being the most frequent response. The two types of trips most frequently identified were weekend outings and vacations.

37. A series of questions was presented to assess preferences related to the site. Each respondent was asked to select no more than nine attributes which he/she felt were most important in the decision to choose this site. From this list, the respondent then identified the five most important and ranked them in order of importance. These attributes were then scored from 1 to 5, with 1 being the least important and 5 being the most important. Data on recreation area choice was scored in the same manner.

38. The results of the campsite selection analysis are shown in Tables 10 and 11. Table 10 shows frequency counts for the original list of nine attributes important in site selection. The most important attributes were distance to lake (66.4 percent), convenience of site to lake (55.9 percent), and shadiness of site (51.9 percent). The ability to keep watch on

Table 10

Frequency Counts, Site Selection Attributes

Rank	Factor	Absolute Frequency	Relative Frequency, %
1	Distance to lake	1047	66.4
2	Site is convenient to lake	882	55.9
3	Site is shady	813	51.9
4	Can watch boat from site	736	46.7
5	Scenic view of lake from site	651	41.3
6	Site is flat or gently sloped	635	40.3
7	Spacing of sites and apparent privacy	629	39.9
8	Site is located right on lake	562	35.6
9	Additional parking for other cars/trailers	551	34.9
10	Distance to restroom	459	29.1
11	Site easy to get into and out of	459	29.1
12	Site is convenient to restroom	358	22.7

Table 11

Importance Scores for Site Attributes

Rank	Factor	Frequency
1	Distance to lake	2099
2	Site is shady	1866
3	Walk-in campsite, no parking on site	1798
4	Spacing of sites and apparent privacy	1359
5	Site convenient to lake	1251
6	Site is flat or gently sloped	1124
7	Site is located right on lake	1122
8	Scenic view of lake from site	889
9	Distance to a restroom	771
10	Site is convenient to a restroom	632
11	Additional parking for more cars/trailers	624
12	Site is easy to get into or out of	608

their boat from the site was important to 46.7 percent of the respondents. Other attributes which rated high included a scenic view of the lake from the site, the topography of the site, spacing of sites, location of site in relation to the waterfront, and availability of parking spaces for additional cars and boat trailers. A shady site which was convenient to the lake and reasonably spaced from other sites was most preferred.

39. Table 11 shows rank orderings based on order of importance of the site attributes. Distance of the site from the lake and shadiness of the site scored very high in both frequency counts and importance scores, as shown in both tables.

40. Frequency counts of responses to recreation area selection attributes are shown in Table 12. Over half of the respondents indicated that the most important attributes are availability of shade (55.7 percent) and access to primary activity (53.0 percent). Other attributes of importance included good maintenance (43.6 percent), and availability of showers (43.6 percent). Electric and water hookups also rated high in importance, as did type of restroom, water quality, and previous visits to the recreation area.

41. Rank orderings based on the scoring techniques previously described are shown in Table 13.

Table 12

Frequency Counts, Recreation Area Selection Attributes

Rank	Factor	Absolute Frequency	Relative Frequency, %
1	Availability of shade	878	55.7
2	Access to primary activity	836	55.0
3	Showers available in recreation area	687	43.6
4	Area well maintained	687	43.6
5	Electric hookups available	601	38.1
6	Water hookups available	520	33.0
7	Type of restrooms	462	29.3
8	Shallow water close to shore	445	28.2
9	Past visits to recreation area	423	26.8
10	Clear water close to area	408	25.9
11	Closer to home than other areas on lake	384	24.4
12	Scenic qualities of area	381	24.2
13	Swimming beach available	354	22.4
14	Gate attendant	349	22.1

Table 13

Importance Scores for Recreation Area Attributes

Rank	Factor	Score
1	Electric hookups available	2218
2	Showers available in recreation area	1468
3	Area accessible to primary activity	1409
4	Water hookups available	1340
5	Area is well maintained	1261
6	Availability of shade	1036
7	Type of restrooms	1006
8	Closer to home than other areas on lake	877
9	Good enforcement of rules	766
10	Security of recreation area	702
11	Gate attendant	618
12	Good launch ramp nearby	563
13	Area easy to get to from main roads	531

PART IV: DISCUSSION

42. The analysis of revealed preferences indicated that all camper types were consistently influenced in their campsite choice by the presence or absence of utilities, view of the lake, shade, canopy, and the quality and closeness of sanitary facilities without obstacles. Secondarily, back-in pads, closeness to lake, impact pads, and vegetative buffer influenced campsite preference for some camper types. These revealed preferences were verified by the findings in the stated preference analysis in that many of the same factors were shown to be important and were similarly ranked. However, the same degree of agreement did not exist between the revealed and stated preferences at the recreation area level. This could be due in part to the very small sample size for the revealed preferences. It could also result from the problem of multicolinearity. The independent variables in many cases appear to co-vary. For example, a developed campground might have utilities, more highly developed sanitary facilities, showers, and various types of campsite pads. Consequently, the relative importance of these attributes in campsite selection was difficult to measure because attributes often come as a package. Statistically, then, many variables did not show up in the stepwise regression analysis due to multicolinearity problems.

43. The problem of multicolinearity was also complicated by the classification of camper types. Since scale of campground development is often directly related to the sophistication of camping equipment used, the amount of variance available for the regression analysis is reduced. The findings in Table 6 are indicative of this problem. When campsites with and without utilities were included in the analysis, many more factors were statistically significant than with either the "with" or "without" utilities analyses. Utilities appear to be the most important factor influencing the type and amount of camping use. Many campers with the more sophisticated camping equipment tend to select the more developed sites (i.e., with utilities). The number of sites they can choose from is smaller and somewhat homogeneous since these sites are usually clustered within the same location in a recreation area. Note that campers without a boat using motor homes or travel trailers indicated no significant selection attributes among those campsites with utilities, while tenters with a boat had six significant campsite selection

factors when all campsites were included in the analysis. In summary, these results should be interpreted with some caution since there appears to be a great deal of multicolinearity among the variables.

44. Further analyses on these indicators will be conducted for the user manual. Only those variables that were significant or highly significant will be included. Future analyses will be conducted to test the predictive power of the individual attributes and to develop models for use in field situations. At this time it appears that three categories of attributes and their respective models would be useful to the field. These include long-term, mid-term, and short-term attributes. Long-term attributes are those requiring major allocations of time and money and which may be beyond the ability or authority of project personnel to implement. For example, a total redesign of an area might be accomplished to provide more sites with better access to the lake. Short-term attributes are those over which project personnel would have the most control. These could be manipulated with in-house resources on a daily or seasonal basis. For example, underbrush might be thinned to provide more sites with a view of the lake. Mid-term attributes would be those that could probably be modified by project personnel but would take more time and capital to implement. Providing electrical hookups to additional sites might be included in this group.

45. In future analyses, the classification of camping types will be reduced to three since there were few differences between boaters and non-boaters. Also, all campsites will be analyzed together rather than dividing them into "with" and "without" utilities groups. Very little additional insight was gained from this separation once it was understood that utilities are the single most important attribute when present on a site.

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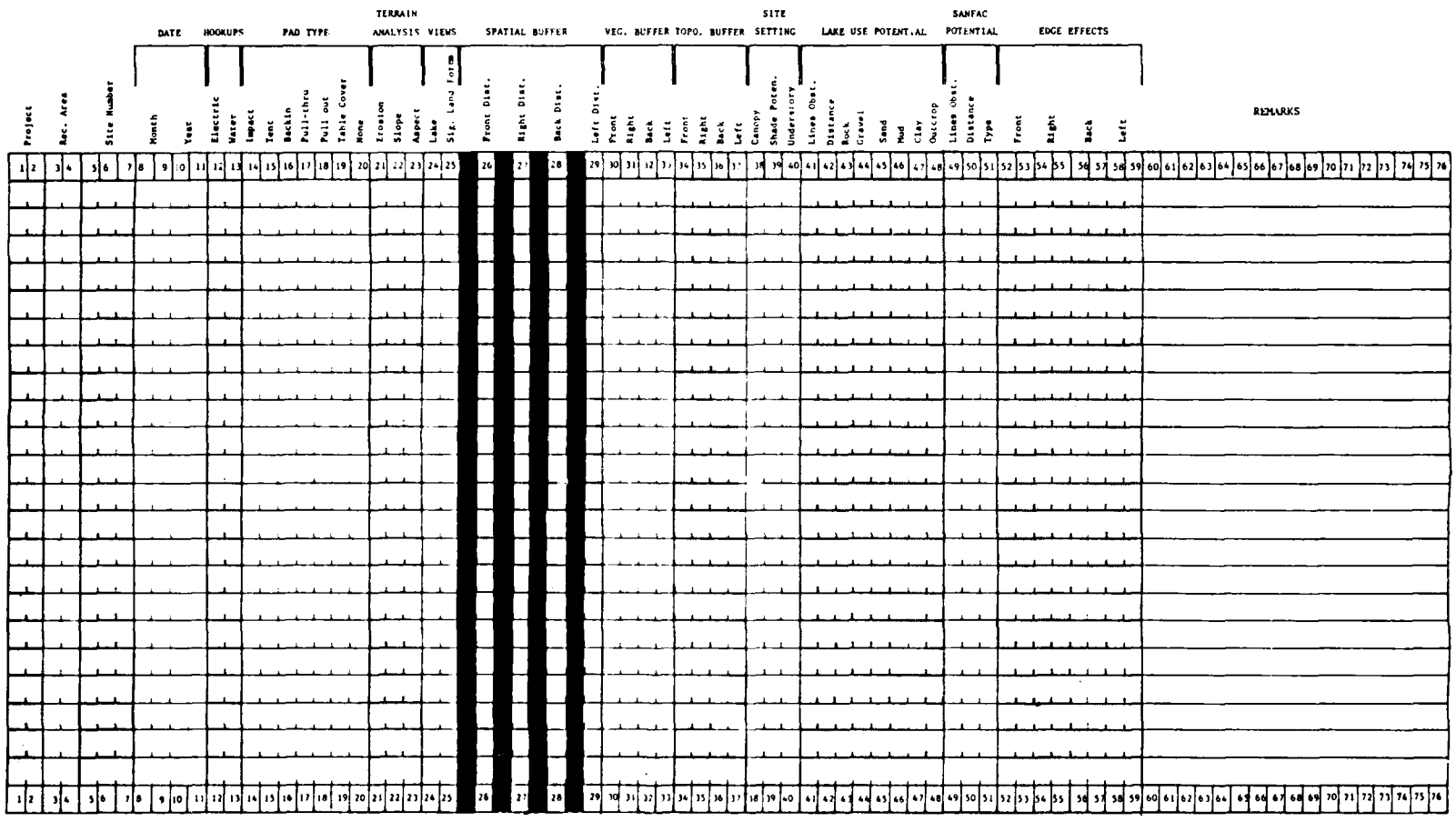
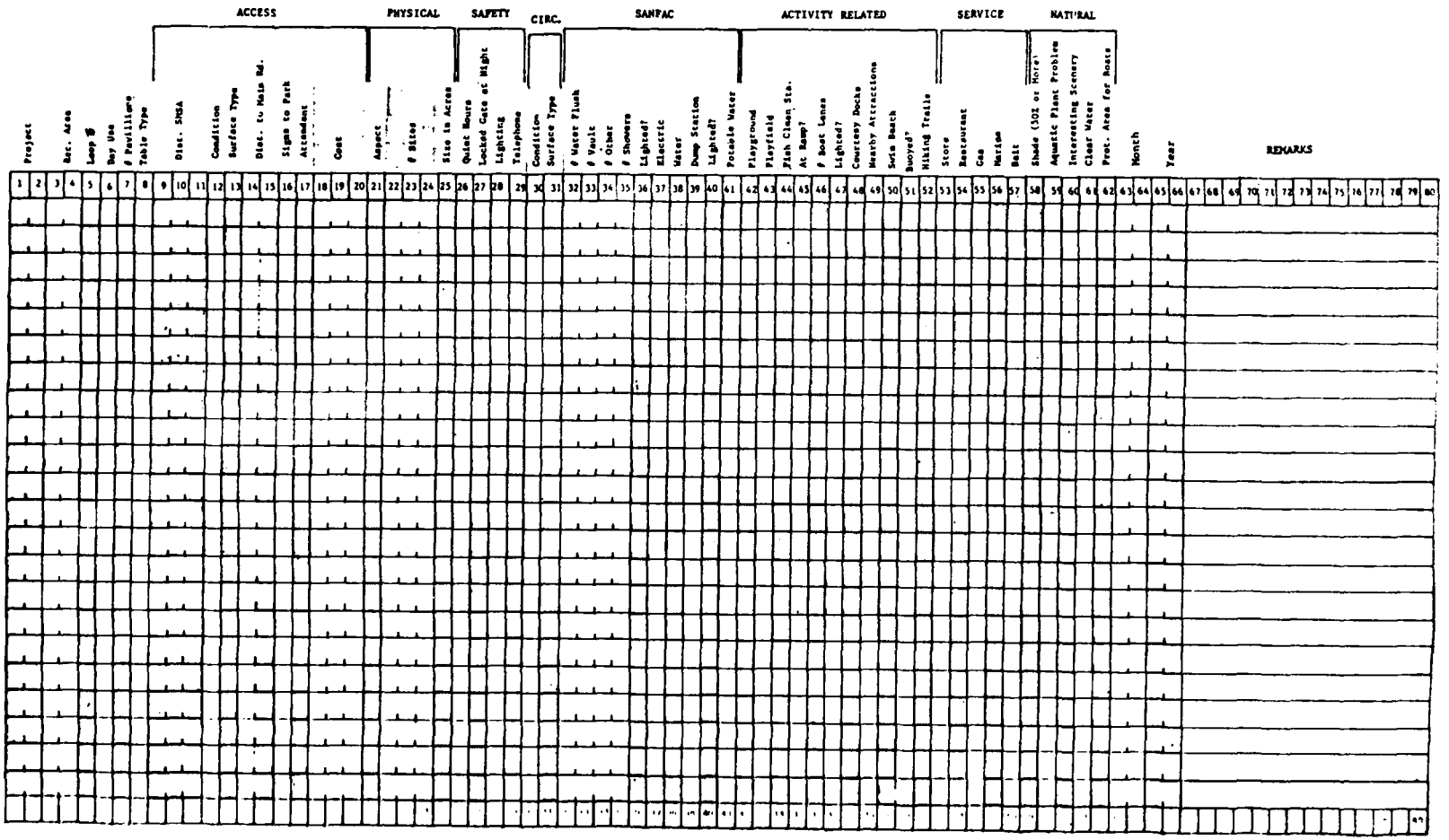
APPENDIX A: REVEALED PREFERENCES DATA COLLECTION FORMS

SITE LEVEL INDICATORS WORKSHEET



RECREATION AREA INDICATOR WORKSHEET



APPENDIX B: OPERATIONAL DEFINITIONS AND RANGES OF INDEPENDENT VARIABLES

Campsite Attributes

Campsite Attribute	Operational Definition	Ranges of Values				
		Hartwell	Milford	Nolin	Somerville	West Point
Utilities	0-if neither water nor electric hookup present	0-1	0-1	0-0	0-1	0-1
	1-if water and/or electric hookup present					
Impact pad	0-if not present	0-1	0-0	0-1	0-0	0-1
	1-if present					
Tent pad	0-if not present	0-1	0-0	0-1	0-0	0-1
	1-if present					
Back-in pad	0-if not present	0-1	0-1	0-1	0-1	0-1
	1-if present					
Pull-through pad	0-if not present	0-1	0-1	0-1	0-0	0-0
	1-if present					
Pull-out pad	0-if not present	0-1	0-0	0-1	0-1	0-0
	1-if present					
Table cover pad	0-if not present	0-0	0-0	0-0	0-1	0-0
	1-if present					
Erosion	0-if severe rill, gully, or holes under trees not present	0-1	0-0	0-0	0-1	0-0
	1-if severe rill, gully, or holes under trees present					
Slope	0-if less than 10% slope	0-1	0-0	0-1	0-1	0-1
	1-if greater than or equal 10% slope					
Lake view	0-if lake view not present	0-1	0-1	0-1	0-1	0-1
	1-if lake view present					
Land view	0-if significant land form present	0-1	0-1	0-1	0-0	0-0
	1-if significant land form not present					
Spatial buffer	0-if none					
	1-if one					
	2-if two					
	3-if three	1-4	1-4	1-4	1-4	1-4
	4-if all four sides have a distance of 250 ft or greater between the site and center of activity					

(Continued)

Campsite Attribute	Operational Definition	Ranges of Values				
		Hartwell	Milford	Nolin	Somerville	West Point
Vegetation buffer	0-if none of the sides have site effectively screened from center of activity by vegetation					
	1-if one . . .					
	2-if two . . .	2-4	0-4	1-4	1-4	1-4
	3-if three . . .					
	4-if four . . .					
Topographic buffer	0-if none of the sides have a land form which removed the center of activity from direct view of the site					
	1-if one . . .					
	2-if two . . .	0-3	0-2	0-2	0-1	0-3
	3-if three . . .					
	4-if four . . .					
Canopy	0-if no canopy present					
	1-if artificial canopy present	0-3	0-3	0-3	0-3	0-3
	2-if single canopy present					
	3-if clump canopy present					
	4-if forest canopy present					
Shade potential	1-if none (less than 25%)					
	2-if partial (25-75%)	0-2	0-2	0-2	0-2	0-2
	3-if full (greater than 75%)					
Distance to lake	0-if 0- 50'					
	1-if 51-100'					
	2-if 101-150'	0-5	0-5	0-5	0-5	0-5
	3-if 151-250'					
	4-if 251-350'					
	5-if greater than 350'					
Distance to sanitary facility	0-if 0- 50'					
	1-if 51-100'					
	2-if 101-150'	0-5	1-5	0-5	1-5	0-5
	3-if 151-250'					
	4-if 251-350'					
	5-if greater than 350'					

(Continued)

Campsite Attribute	Operational Definition	Ranges of Values				
		Hartwell	Milford	Nolin	Somerville	West Point
Type of sanitary facility	0-if none present					
	1-if portable					
	2-if pit/vault	3-4	2-4	2-4	2-4	2-4
	3-if flush only					
	4-if flush with shower					
Lines of obstacles to lake	0-if no obstacles present					
	1-if one obstacle present					
	2-if two obstacles present	0-5	0-5	0-5	0-5	0-5
	3-if three obstacles present					
	4-if four obstacles present					
	5-if five or more obstacles present					
Line of obstacles to sanitary facility	0-if no obstacles present					
	1-if one obstacle present					
	2-if two obstacles present	0-5	0-5	0-5	0-5	0-4
	3-if three obstacles present					
	4-if four obstacles present					
	5-if five or more obstacles present					

Recreation Area Attributes

Recreation Area Attribute	Operational Definition	Range of Values				
		Hartwell	Milford	Nolin	Somerville	West Point
Day use	0-if none 1-if day use and camping present 2-if day use only	0-1	1-1	1-1	1-1	0-1
Distance to SMSA	Average distance from closest SMSA to the recreation area, miles	0-0	75-75	80-80	30-30	40-40
Signage	0-if none 1-if present but not conspicuous 2-if present and conspicuous 3-if prewarning	2-3	1-3	2-2	2-2	1-1
Camping fees	Average cost of overnight camping at the recreation area, dollars	4-5	3-5	4-6	4-6	6-6
Number of campsites	Number of campsites at the recreation area	50-156	88-172	140-306	100-298	97-258
Water flush toilets	Number of water flush toilets at recreation area	2-12	0-5	0-8	2-8	7-18
Vault toilets	Number of vault toilets at recreation area	0-0	5-12	0-4	0-3	0-10
Other toilets	Number of other types of toilets at recreation area	0-2	0-0	0-0	0-1	0-6
All toilets	Number of all types of toilets at recreation area	2-12	5-13	4-8	5-8	11-26
Showers	Number of shower stalls at recreation area	0-8	0-1	0-6	0-8	2-6
Dump station	0-if dump station not present at recreation area 1-if dump station present at recreation area	0-1	0-1	1-1	1-1	1-1
Playground	0-if playground not present at recreation area 1-if playground present at recreation area	0-1	0-1	0-1	0-0	1-1
Boat lanes	Number of boat lanes present at recreation area	0-4	1-10	2-4	1-8	2-8
Shade	0-if less than 50% of campsites at recreation area have shade 1-if 50% or more of the campsites at recreation have shade	1-1	0-1	1-1	0-1	1-1
Campsite utilities	0-if no campsites at recreation area have campsite utilities (water and/or electric) 1-if some campsites at recreation area have campsite utilities	0-1	0-1	0-0	0-1	1-1

APPENDIX C: STATISTICAL PROCEDURE SELECTION PROCESS

1. The assessment of the relative merit of a select set of independent variables from a larger set of variables is a complex undertaking (Kerlinger and Pedhazur 1973) and results in two opposing criteria. The first criterion states that the model should include as many independent variables as possible so that reliable fitted values can be determined. The other criterion argues that since the cost involved in obtaining information on a large number of independent variables and subsequently monitoring them is high, it would be desirable to identify an equation which includes as few independent variables as possible. The compromise solution between these two criteria is usually called variable selection or selecting the best regression equation.

2. When the aim of the research is the selection of the salient variables that account for most of the variance exhibited by the total set of variables, then regression techniques are recommended (Kerlinger and Pedhazur 1973). Furthermore, according to Draper and Smith (1967), stepwise regression is the best variable selection procedure among the family of regression techniques. Stepwise regression procedures are useful when the researcher wants to select from a large set of variables those variables which should be included in a regression model. These procedures are most helpful for exploratory analysis because they can give insight into the relationships between the independent and dependent variables. However, stepwise regression procedures are not guaranteed to give the best model for the data or even the model with the largest R-square (SAS Institute, Inc. 1982).

3. Stepwise regression techniques introduce statistical control of variables into the study by examining the variance of one variable at a time while mathematically holding all other variables constant. Statistical control identifies, isolates, or nullifies variance in the dependent variable that is presumably caused by one or more independent variables (Kerlinger and Pedhazur 1973). When using stepwise regression techniques to select variables, three important issues need to be considered. First, the data set must include a large set of subjects. The rule of thumb is that there should be 30 subjects per independent variable. In general, the larger the sample, the more stable the results (Kerlinger and Pedhazur 1973). In this study, sample size was not a constraint. Second, stepwise regression techniques deal with the intercorrelations of the independent variables when weighing the partial correlation between any independent variable and the dependent variable. This produces a

common problem in behavioral research because the independent variables are usually correlated, sometimes substantially. Since several hundred models were run, replication helped to screen out those variables that might appear to have a strong relationship simply due to the intercorrelations and to identify those which consistently related to campsite selection. Third, it needs to be clarified that stepwise regression only examines models that are assumed to be additive. That is, the dependent variable is determined by Variable 1 plus Variable 2 and not by Variable 1 times Variable 2. The additive assumption is characteristic of applied regression analysis and is frequently justified (Lewis-Beck 1979).

APPENDIX D: REGRESSION TABLES FOR INDEPENDENT VARIABLES

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE																						
			IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.	UTILITIES
TENTERS WITH BOATS	WATSADLERS	0.637																					+	-
	CRESCENT	0.274																					+	
	SPRINGFIELD	0.468										+												
	MILLTOWN	0.595																				+		
	ASBURY	0.721											+		+									
	OCONEE POINT	0.566																				+		
	TWIN LAKES	0.633	+																					-
TENTERS WITHOUT BOATS	WATSADLERS	0.762																					+	-
	CRESCENT	0.575														+								
	SPRINGFIELD	0.647						+		+										-				
	MILLTOWN	0.588																					+	
	ASBURY	0.718																				+		
	OCONEE POINT	0.727								+				+										
	TWIN LAKES	0.593													-									-
POP-UP-PICKUP-VAN WITH BOATS	WATSADLERS	0.913																						+
	CRESCENT	0.400											+							-				
	SPRINGFIELD	0.440						+							+					-				
	MILLTOWN	0.202								+														
	ASBURY	0.297								+														
	OCONEE POINT	0.522				+										+								
	TWIN LAKES	0.789									+		-											+
POP-UP-PICKUP-VAN WITHOUT BOATS	WATSADLERS	0.658																						+
	CRESCENT	0.279																					+	
	SPRINGFIELD	0.285										+												
	MILLTOWN	0.298								+														
	ASBURY	0.362								+														
	OCONEE POINT	0.584			+																		+	
	TWIN LAKES	0.698								+										-				+
MOTOR HOME-TRAVEL TRAILER WITH BOATS	WATSADLERS	0.674							+							+								
	CRESCENT	0.387												+		+								
	SPRINGFIELD	0.401						+														+		
	MILLTOWN	0.356								+														
	ASBURY	0.568						+		+										-				
	OCONEE POINT	0.700	+													+								
	TWIN LAKES	0.536																				+		
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	WATSADLERS	0.679													+									+
	CRESCENT	0.372														+								
	SPRINGFIELD	0.367																					+	
	MILLTOWN	0.688								+		+	-											
	ASBURY	0.470																				+		
	OCONEE POINT	0.629	+																				+	
	TWIN LAKES	0.639	+																					

Figure D1. Revealed preferences for all campsites in selected recreation areas at Hartwell Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC	UTILITIES
TENTERS WITH BOATS	CURTIS CREEK	0.309														+	+							
	FARNUM CREEK	0.461								+			-				+							
	ROLLING HILLS	0.208																					+	-
	SCHOOL CREEK	0.241										+												
	TIMBER CREEK																							
TENTERS WITHOUT BOATS	CURTIS CREEK	0.339		+													+							
	FARNUM CREEK	0.450								+														
	ROLLING HILLS	0.363																					+	-
	SCHOOL CREEK	0.234		+																				
	TIMBER CREEK																							
POP-UP-PICKUP-VAN WITH BOATS	CURTIS CREEK	0.678								+							+			-		-		+
	FARNUM CREEK	0.517								+							+							
	ROLLING HILLS	0.702		-									-				+						+	+
	SCHOOL CREEK	0.379											+				+							
	TIMBER CREEK																							
POP-UP-PICKUP-VAN WITHOUT BOATS	CURTIS CREEK	0.538		+													+			+				
	FARNUM CREEK	0.552								+			-				+							
	ROLLING HILLS	0.626												-									+	+
	SCHOOL CREEK	0.360								+														
	TIMBER CREEK																							
MOTOR HOME-TRAVEL TRAILER WITH BOATS	CURTIS CREEK	0.511								+						+				-	+			
	FARNUM CREEK	0.497								+			-			+								
	ROLLING HILLS	0.375											-										+	
	SCHOOL CREEK	0.476								+						+								
	TIMBER CREEK																							
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	CURTIS CREEK	0.488								+														
	FARNUM CREEK	0.431								+							+							
	ROLLING HILLS	0.513										-									+			
	SCHOOL CREEK	0.549								+						+								
	TIMBER CREEK																							

Figure D2. Revealed preferences for all campsites in selected recreation areas at Milford Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.
TENTERS WITH BOATS	MOUTARDIER	0.388									+									+			
	DOG CREEK	0.628								+	-									+			
	WAX CREEK	0.589	+													+							
TENTERS WITHOUT BOATS	MOUTARDIER	0.428	-																	+			
	DOG CREEK	0.725								+					+			-					
	WAX CREEK	0.606	+							+						+							
POP-UP-PICKUP-VAN WITH BOATS	MOUTARDIER	0.087																			+		
	DOG CREEK	0.150													+								
	WAX CREEK	0.246	+																				
POP-UP-PICKUP-VAN WITHOUT BOATS	MOUTARDIER	0.321			-										+								
	DOG CREEK	0.333	+													+				-			
	WAX CREEK	0.197	+																				
MOTOR HOME-TRAVEL TRAILER WITH BOATS	MOUTARDIER	0.265																		+			
	DOG CREEK	0.677								+	-	+						-			+		
	WAX CREEK	0.484	+							+													
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	MOUTARDIER	0.522	-													+				+			
	DOG CREEK	0.471										+						-					
	WAX CREEK	0.489	+							+													

NOTE: NOLIN HAS NO SITES WITH UTILITIES SO ALL SITES WERE ANALYZED TOGETHER FOR THE STUDY. THERE ARE NO OTHER FIGURES FOR NOLIN.

Figure D3. Revealed preferences for all campsites in selected recreation areas at Nolin Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTR	IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	EROSION	SLOPE	CANOPY	SHADE POTENTIAL	UNDERSTORY	DISTANCE TO LAKE	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC	UTILITIES
TENTERS WITH BOATS	BIG CREEK	0.442							+							
	ROCKY CREEK	0.834			+					+			-			-
	YEGUA CREEK	0.857			-	+						+		-	-	-
	OVERLOOK	0.472							+							
TENTERS WITHOUT BOATS	BIG CREEK	0.595		+						+				-		
	ROCKY CREEK	0.721													+	
	YEGUA CREEK	0.779		+		+								-		
	OVERLOOK	0.795								+					+	
POP-UP-PICKUP-VAN WITH BOATS	BIG CREEK	0.169							+							
	ROCKY CREEK	0.831									-			+		+
	YEGUA CREEK	0.821		-							-	+				+
	OVERLOOK	0.522					+			+						
POP UP-PICKUP-VAN WITHOUT BOATS	BIG CREEK	0.133							+							
	ROCKY CREEK	0.647												+		+
	YEGUA CREEK	0.808		-								+				+
	OVERLOOK	0.131												+		
MOTOR HOME-TRAVEL TRAILER WITH BOATS	BIG CREEK	0.342							+							
	ROCKY CREEK	0.758											+		+	
	YEGUA CREEK	0.791						+	+					+		
	OVERLOOK	0.880											-	+	+	
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	BIG CREEK	0.575							+							
	ROCKY CREEK	0.132							-	+				-	+	
	YEGUA CREEK	0.761					+	+	+							
	OVERLOOK	0.913					+								+	

Figure D4. Revealed preferences for all campsites in selected recreation areas at Somerville Lake

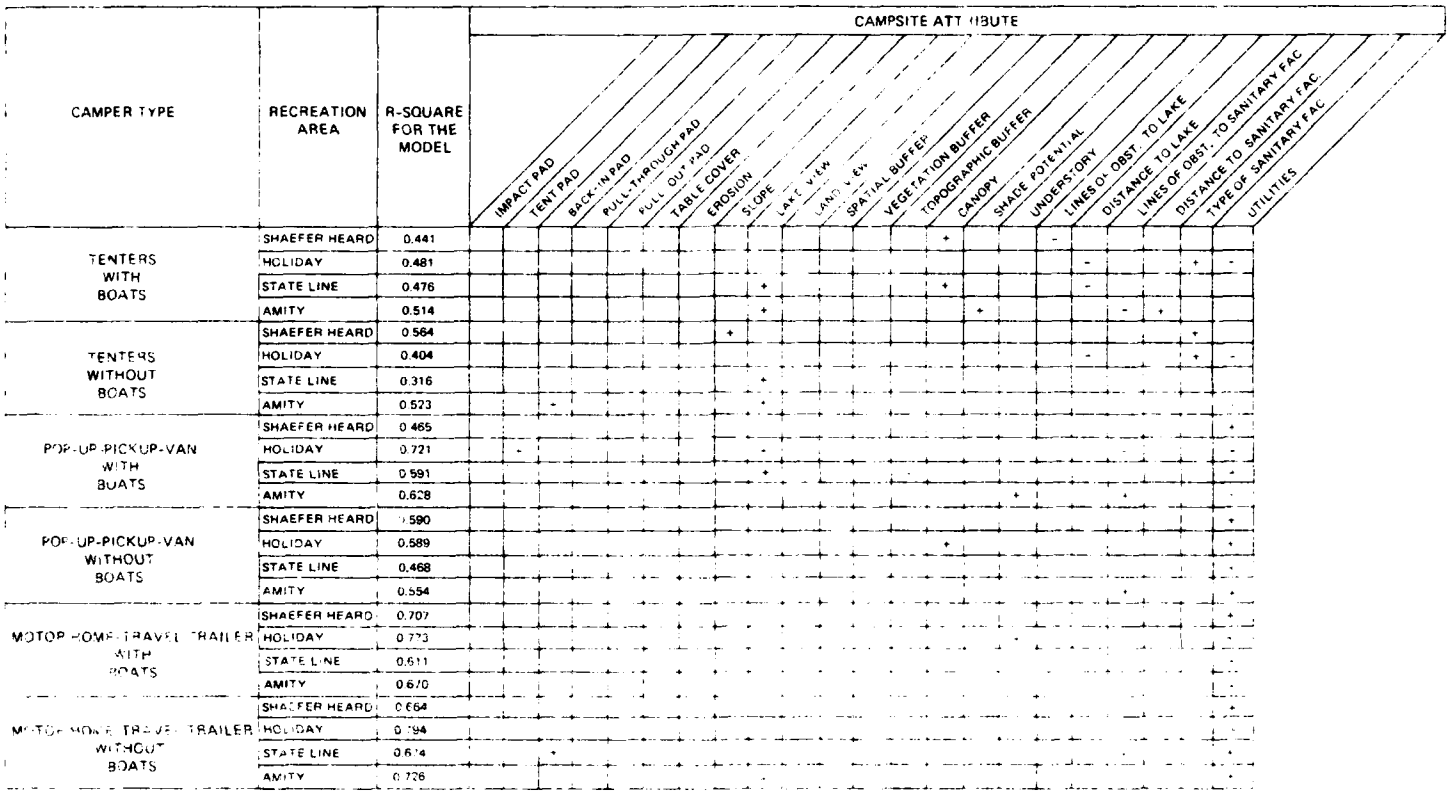


Figure D5. Revealed preferences for all campsites in selected recreation areas at West Point Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC
TENTERS WITH BOATS	WATSADLERS	0.750								+													
	CRESCENT	0.274																					+
	SPRINGFIELD	0.467										+											
	MILLTOWN	0.595																				+	
	ASBURY	0.721							-				+		+								
	OCONEE POINT	0.565																				+	
	TWIN LAKES	0.631																				+	
TENTERS WITHOUT BOATS	WATSADLERS	0.800																					+
	CRESCENT	0.575																					
	SPRINGFIELD	0.647						+		+										-			
	MILLTOWN	0.588																					+
	ASBURY	0.718																				+	
	OCONEE POINT	0.727								+				+									
	TWIN LAKES	0.641													+								
POP-UP-PICKUP-VAN WITH BOATS	WATSADLERS	0.573																		+			
	CRESCENT	0.400										+								-			
	SPRINGFIELD	0.440						+							+					-			
	MILLTOWN	0.202								+													
	ASBURY	0.297								+													
	OCONEE POINT	0.522			+											+							
	TWIN LAKES	0.444		+																			
POP-UP-PICKUP-VAN WITHOUT BOATS	WATSADLERS	0.274																		+			
	CRESCENT	0.279																				+	
	SPRINGFIELD	0.285																				+	
	MILLTOWN	0.298								+													
	ASBURY	0.362								+													
	OCONEE POINT	0.584		+																		+	
	TWIN LAKES	0.385													+								
MOTOR HOME-TRAVEL TRAILER WITH BOATS	WATSADLERS	0.729							+							+							
	CRESCENT	0.386												+		+							
	SPRINGFIELD	0.401						+				+											
	MILLTOWN	0.356								+													
	ASBURY	0.568						+		+										-			
	OCONEE POINT	0.700	+													+							
	TWIN LAKES	0.408								+													
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	WATSADLERS	0.697																				+	
	CRESCENT	0.372														+							
	SPRINGFIELD	0.367																					+
	MILLTOWN	0.668								+		+											
	ASBURY	0.470																				+	
	OCONEE POINT	0.629	+																				+
	TWIN LAKES	0.509														+							

Figure D6. Revealed preferences for campsites without utilities at Hartwell Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.
TENTERS WITH BOATS	CURTIS CREEK	0.461														+		-					+
	FARNUM CREEK	0.360								+			-			+							
	ROLLING HILLS	0.232								+													
	SCHOOL CREEK	0.241										+											
	TIMBER CREEK																						
TENTERS WITHOUT BOATS	CURTIS CREEK	0.450																			+		
	FARNUM CREEK	0.330								+													
	ROLLING HILLS	0.397																					+
	SCHOOL CREEK	0.234		+																			
	TIMBER CREEK																						
POP-UP-PICKUP-VAN WITH BOATS	CURTIS CREEK	0.517		+															-				
	FARNUM CREEK	0.407								+						+							
	ROLLING HILLS	0.307																					+
	SCHOOL CREEK	0.379											+			+							
	TIMBER CREEK																						
POP-UP-PICKUP-VAN WITHOUT BOATS	CURTIS CREEK	0.552																			+		
	FARNUM CREEK	0.455								+			-			+							
	ROLLING HILLS	0.412																					+
	SCHOOL CREEK	0.360								+													
	TIMBER CREEK																						
MOTOR HOME-TRAVEL TRAILER WITH BOATS	CURTIS CREEK	0.497													+						+		
	FARNUM CREEK	0.555								+			-		+								
	ROLLING HILLS	0.331																					+
	SCHOOL CREEK	0.476								+						+							
	TIMBER CREEK																						
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	CURTIS CREEK	0.431		+															-				
	FARNUM CREEK	0.536								+						+							
	ROLLING HILLS	0.558																					+
	SCHOOL CREEK	0.549								+					+								
	TIMBER CREEK																						

Figure D7. Revealed preferences for campsites without utilities at Milford Lake

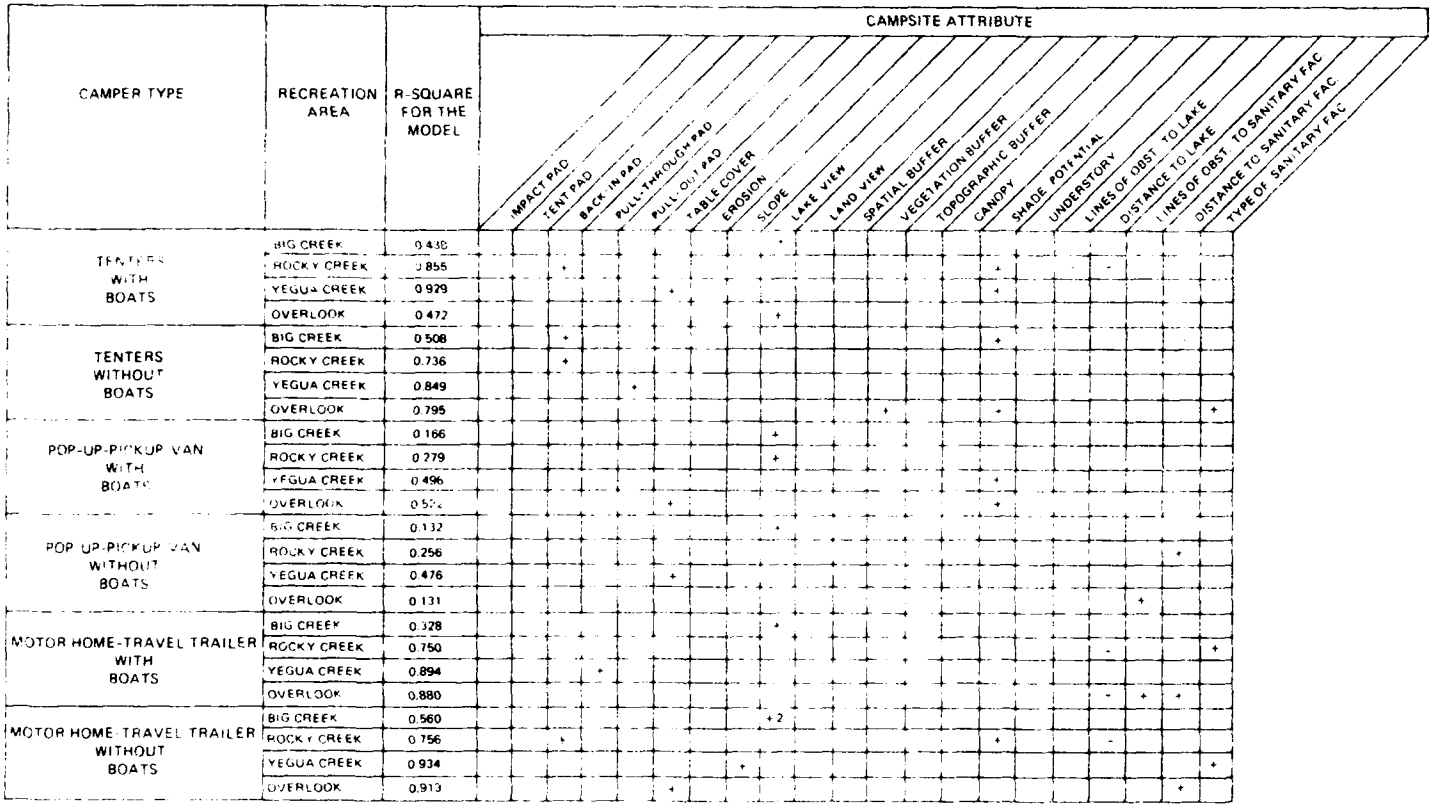


Figure D8. Revealed preferences for campsites without utilities at Somerville Lake

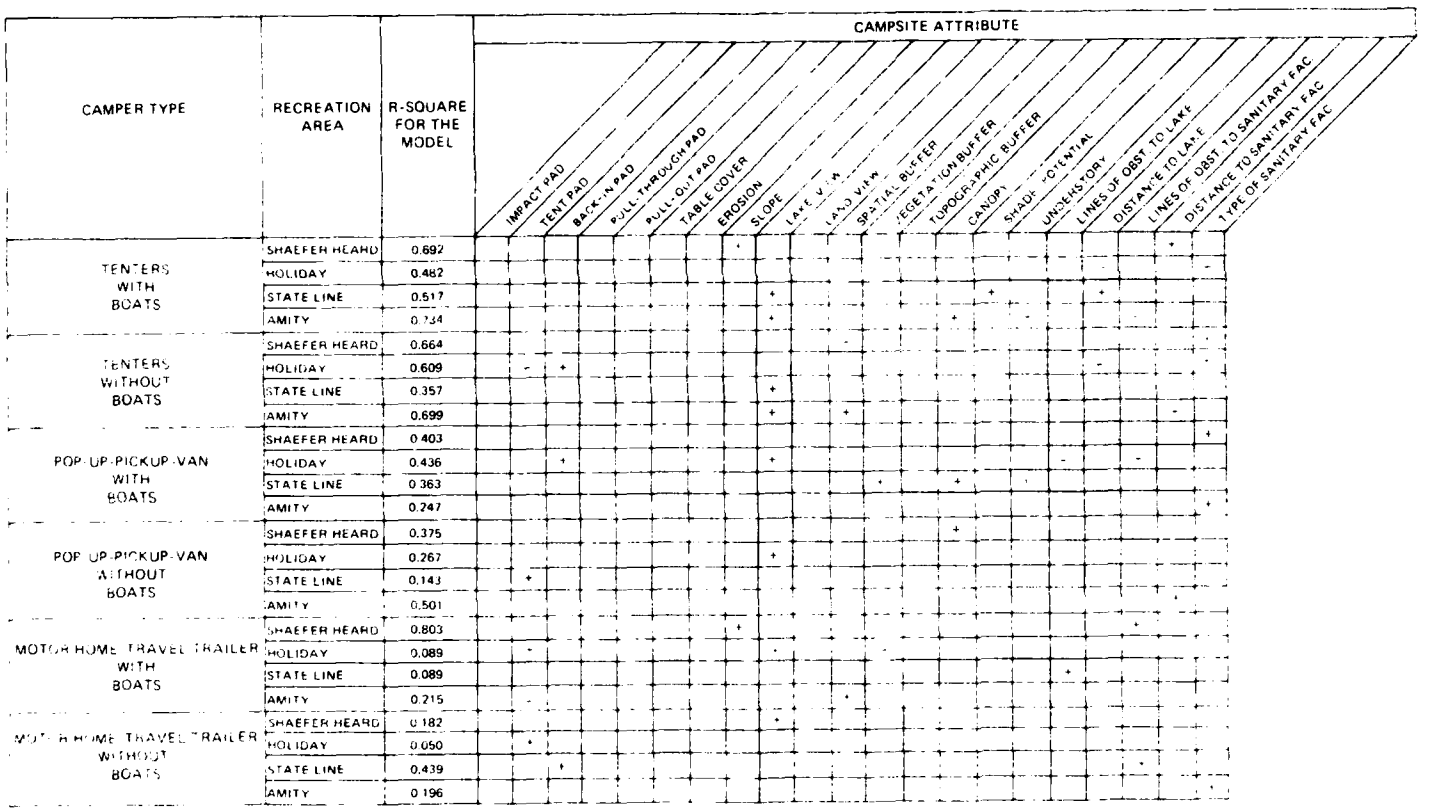


Figure D9. Revealed preferences for campsites without utilities at West Point Lake

CAMPER TYPE	RECREATION AREA	R SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST TO LAKE	DISTANCE TO LAKE	LINES OF OBST TO SANITARY FAC	DISTANCE TO SANITARY FAC	TYPE OF SANITARY FAC
TENTERS WITH BOATS	WATSADLERS	0.401										+											
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.503													+								
TENTERS WITHOUT BOATS	WATSADLERS	0.439																				+	
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.524													+								
POP-UP-PICKUP-VAN WITH BOATS	WATSADLERS	0.923	+																				
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.807																		-		+	
POP-UP-PICKUP-VAN WITHOUT BOATS	WATSADLERS	0.703													+								
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.772															-					+	
MOTOR HOME-TRAVEL TRAILER WITH BOATS	WATSADLERS	0.653													+								
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.716													+					-			
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	WATSADLERS	0.678													+								
	CRESCENT																						
	SPRINGFIELD																						
	MILLTOWN																						
	ASBURY																						
	OCONEE POINT																						
	TWIN LAKES	0.757	+																				

Figure D10. Revealed preferences for campsites with utilities at Hartwell Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.
TENTERS WITH BOATS	CURTIS CREEK	0.363														+							
	FARNUM CREEK																						
	ROLLING HILLS																						
	SCHOOL CREEK																						
	TIMBER CREEK																						
TENTERS WITHOUT BOATS	CURTIS CREEK	0.624		+												+				-			
	FARNUM CREEK																						
	ROLLING HILLS	0.256														+							
	SCHOOL CREEK																						
	TIMBER CREEK																						
POP-UP-PICKUP-VAN WITH BOATS	CURTIS CREEK	0.789		+												+			-				
	FARNUM CREEK																						
	ROLLING HILLS	0.787											-			+							+
	SCHOOL CREEK																						
	TIMBER CREEK																						
POP-UP-PICKUP-VAN WITHOUT BOATS	CURTIS CREEK	0.510								+						+							
	FARNUM CREEK																						
	ROLLING HILLS	0.625								+													
	SCHOOL CREEK																						
	TIMBER CREEK																						
MOTOR HOME-TRAVEL TRAILER WITH BOATS	CURTIS CREEK	0.435								+						+							
	FARNUM CREEK																						
	ROLLING HILLS	0.427															-			+			
	SCHOOL CREEK																						
	TIMBER CREEK																						
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	CURTIS CREEK	0.476								+													
	FARNUM CREEK																						
	ROLLING HILLS	0.483															-			+			
	SCHOOL CREEK																						
	TIMBER CREEK																						

Figure D11. Revealed preferences for campsites with utilities at Milford Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	L-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.
TENTERS WITH BOATS	BIG CREEK	0.442								+													
	ROCKY CREEK	0.441								+													
	YEGUA CREEK	0.786			+													-					-
	OVERLOOK																						
TENTERS WITHOUT BOATS	BIG CREEK	0.595			+									+	-			-					
	ROCKY CREEK	0.462																					
	YEGUA CREEK	0.695			+											+		-	-				-
	OVERLOOK														+								
POP-UP-PICKUP-VAN WITH BOATS	BIG CREEK	0.169								+													
	ROCKY CREEK	0.795																			+		
	YEGUA CREEK	0.767												-	+			+					
	OVERLOOK																						
POP-UP-PICKUP-VAN WITHOUT BOATS	BIG CREEK	0.133								+													
	ROCKY CREEK	0.753																		+			
	YEGUA CREEK	0.801													+			+		-			+
	OVERLOOK																						
MOTOR HOME-TRAVEL TRAILER WITH BOATS	BIG CREEK	0.342								+													
	ROCKY CREEK	0.859			+								+					-		-			
	YEGUA CREEK	0.799			+			+				+							-				
	OVERLOOK																						
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	BIG CREEK	0.575								+													
	ROCKY CREEK	0.718			+															-			
	YEGUA CREEK	0.747			+			+	+						+				-				
	OVERLOOK																						

Figure D12. Revealed preferences for campsites with utilities at Somerville Lake

CAMPER TYPE	RECREATION AREA	R-SQUARE FOR THE MODEL	CAMPSITE ATTRIBUTE: IMPACT PAD	TENT PAD	BACK-IN PAD	PULL-THROUGH PAD	PULL-OUT PAD	TABLE COVER	EROSION	SLOPE	LAKE VIEW	LAND VIEW	SPATIAL BUFFER	VEGETATION BUFFER	TOPOGRAPHIC BUFFER	CANOPY	SHADE POTENTIAL	UNDERSTORY	LINES OF OBST. TO LAKE	DISTANCE TO LAKE	LINES OF OBST. TO SANITARY FAC.	DISTANCE TO SANITARY FAC.	TYPE OF SANITARY FAC.
TENTERS WITH BOATS	SHAEFER HEARD	0.434													+								
	HOLIDAY	0.558								+					+								
	STATE LINE	0.386													+								
	AMITY	0.425																	-				+
TENTERS WITHOUT BOATS	SHAEFER HEARD	0.527													+								
	HOLIDAY	0.402										+											
	STATE LINE	0.216								+													
	AMITY	0.414														+							
POP-UP-PICKUP-VAN WITH BOATS	SHAEFER HEARD	0.501												+									
	HOLIDAY	0.772		+															-				
	STATE LINE	0.642								+													
	AMITY	0.678															+				+		
POP-UP-PICKUP-VAN WITHOUT BOATS	SHAEFER HEARD	0.639		+									-										
	HOLIDAY	0.709										+			+				-				
	STATE LINE	0.506								+													
	AMITY	0.602																		+			+
MOTOR HOME-TRAVEL TRAILER WITH BOATS	SHAEFER HEARD	0.711		+																			
	HOLIDAY	0.806		+									-										
	STATE LINE	0.680								+						+							
	AMITY	0.761								+					+					-			
MOTOR HOME-TRAVEL TRAILER WITHOUT BOATS	SHAEFER HEARD	0.683																					+
	HOLIDAY	0.796		+																			
	STATE LINE	0.701								+										+			
	AMITY	0.777																	-				+

Figure D13. Revealed preferences for campsites with utilities at West Point Lake

APPENDIX E: STATED PREFERENCES QUESTIONNAIRE

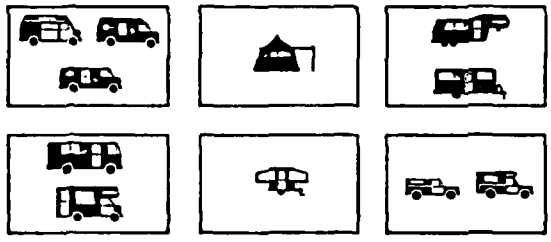
KEY INDICATORS SURVEY

1. Please indicate the zip code where you live: ___ ___ ___ ___ ___

   (NOTE: If you do not know your zip code, please tell us the city and state where you live: CITY_____ STATE_____)

2. How many miles do you live from this park? _____ miles

3. Please place an X in each of the boxes below which most closely resembles the types of camping equipment you are using on this trip:



4. Which of the following best describes the group you are in on this trip? (CIRCLE ONE)

   1 - you alone

   2 - couple

   3 - family

   4 - group of families

   5 - group of friends

   6 - group of family and friends

   7 - organization, club, school or church group, etc.

   8 - other (specify)_____

5. Please write the number of individuals sharing your campsite by age group below:

   ____twelve and under

   ____thirteen to twenty

   ____twenty-one to thirty-four

   ____thirty-five to sixty-one

   ____sixty-two or over

Now we are going to ask you some questions about your decision to come to this particular LAKE.

6. Was this lake the main destination of your trip? (CIRCLE ONE)

YES NO

7. How many nights do you plan to spend at this lake on this trip? _____nights

8. Have you ever visited this lake before? (CIRCLE ONE)

YES NO

If yes, how many visits to this lake have you made since May 1, 1983? _____

How many visits to this lake did you make last year? _____

9. Please check (✓) no more than three (3) items in each group below that were important in your decision to visit this lake instead of another lake:

GROUP I (CHECK ONLY 3)

a.		Cost of trip
b.		Close to home
c.		Availability of services (marina, store, etc.). Please list those that are important to you_____
d.		Other parks are available at lake
e.		Different types of parks available
f.		Lake is easy to get to from major highways

GROUP II (CHECK ONLY 3)

g.		Lake as a whole has clear water
h.		Comfortable water temperature
i.		Absence of excessive vegetation in the lake
j.		Lack of floating debris in lake
k.		Fishing reputation
l.		Presence of wildlife
m.		Availability of other amusements and attractions near the lake

GROUP III (CHECK ONLY 3)

n.		Reservation system for campsites
o.		Maintenance at the lake is good
p.		Friendliness of the staff
q.		Size of the lake
r.		Depth of the water
s.		Age of the lake
t.		Other_____

10. Using only the nine (9) items you checked in Question 9 above, select the five (5) most important and write the letter of those below in their order of importance (with 1 being the most important). Then, on the scale to the right, indicate by a check (✓) to what degree this lake satisfied each of these.

	EXCELLENT	BETTER THAN AVERAGE	AVERAGE	POORER THAN AVERAGE	NOT AT ALL
(1)_____					
(2)_____					
(3)_____					
(4)_____					
(5)_____					

11. Are there any reasons that would cause you to not visit this lake in the future? (CIRCLE ONE)

YES NO

If yes, please list those reasons below in order of importance, with 1 being the most important.

(1)_____

(2)_____

(3)_____

(4)_____

(5)_____

12. When you made the decision to come to this lake, did you consider going to any other lakes? (CIRCLE ONE)

YES NO

If yes, please list those lakes:_____

_____

Why did you choose to visit this lake instead of the other(s) you just listed?_____

_____

The next few questions are similiar to the questions you just answered. However, these are about your decision to use this particular PARK or RECREATION AREA on the lake.

13. Have you ever visited this park before? (CIRCLE ONE)

YES NO

If yes, how many times since May 1, 1983? _____

How many visits to this park last year? _____

14. Please check (✓) no more than three items in each group below that were important in your decision to visit this particular park instead of another park on this lake:

	GROUP I (CHECK ONLY 3)
a.	Electric hookups available
b.	Water hookups available
c.	Type of restrooms
d.	Telephone available in park
e.	Park has good lighting at night
f.	Dump station available
g.	Park is easy to get to from main roads
h.	Closer to home than other parks on the lake
i.	Good circulation roads within the park
j.	Park signs are easy to understand
k.	Roads to park are in good condition
l.	Showers available in park
m.	Children's playground is provided
n.	Gate attendant

	GROUP II (CHECK ONLY 3)
o.	Park is accessible to your primary activity (fishing, skiing, etc.)
p.	Park is used by groups similiar to mine
q.	Good enforcement of rules
r.	Services (store, bait, etc.) are available nearby. Please list those that are important to you: _____ _____
s.	Park is well maintained
t.	Nearby amusements or attractions
u.	Size of park
v.	Security of park
w.	Cost to use park
x.	Good launch ramp nearby
y.	Lack of crowding
z.	Past visits to park

	GROUP III (CHECK ONLY 3)
aa.	Absence of excessive vegetation in water near park
bb.	Clear water close to park
cc.	Lack of floating debris in water near park
dd.	Scenic qualities of park
ee.	Presence of wildlife in park
ff.	Availability of shade
gg.	Swimming beach in park
hh.	Hiking trails available in park
ii.	Type of shoreline (rocky, sandy)
jj.	Shallow water close to shore
kk.	Deep water nearby
ll.	Open playfield available
mm.	Other _____ _____ _____

15. Using only the nine (9) items you checked in Question 14 above, select the five (5) most important and write the letter of those below in their order of importance (with 1 being the most important). Then, on the scale to the right, indicate by a check (✓) to what degree this park satisfied each of these.

	EXCELLENT	BETTER THAN AVERAGE	AVERAGE	POORER THAN AVERAGE	NOT AT ALL
(1) _____					
(2) _____					
(3) _____					
(4) _____					
(5) _____					

16. Are there any reasons that would cause you to not visit this park in the future? (CIRCLE ONE)

YES NO

If yes, please list those reasons below in order of importance, with 1 being the most important.

(1)_____

(2)_____

(3)_____

(4)_____

(5)_____

17. When you decided to visit this park, did you consider going to any other parks on this lake? (CIRCLE ONE)

YES NO

If yes, what other parks did you consider?_____

_____

Why did you choose to visit this park instead of the other(s) you listed above?_____

_____

This is the last section of the questionnaire. Although these questions are similiar to those you have already answered, they address only your decision to use this particular CAMPSITE within this park.

18. Have you ever used this particular campsite before? (CIRCLE ONE)

YES NO

If yes, do you always try to get this particular campsite when visiting this park? (CIRCLE ONE)

YES NO

19. Please check (✓) no more than three (3) items in each group below that were important in your decision to select this particular campsite instead of another campsite in this park:

GROUP I (CHECK ONLY 3)

a.		Distance to lake
b.		Site is near the gatehouse
c.		Children's playground is near site
d.		Trail access convenient to site
e.		Site located near amphitheater
f.		Playfield or open area close by
g.		Picnic area is nearby
h.		Protected area for beaching boat
i.		Walk-in campsite (parking not allowed on the site)
j.		I can watch my boat from the site
k.		Convenient parking for additional vehicles or boat trailers
l.		Good lighting at the site for security

GROUP II (CHECK ONLY 3)

m.		No severe erosion on site
n.		Site is flat or gently sloped
o.		Scenic view of lake from site
p.		Spacing between this site and others gives a feeling of privacy
q.		A manmade cover is provided over the table
r.		Site is shady
s.		Trees and bushes screen this site from others
t.		Interesting scenery to view (other than the lake)
u.		Type of shoreline (rocky, sandy)
v.		Hills or valleys on one or more sides to isolate this site from other sites
w.		Deep woods on one or more sides

GROUP III (CHECK ONLY 3)

x.		Site is convenient to lake
y.		Distance to a restroom
z.		Kind of pad surface provided for your type of camping equipment
aa.		Site is convenient to a restroom
bb.		Distance to shower facility
cc.		Site is easy to get in and out of
dd.		Site is convenient to a swimming beach
ee.		Site is located right on the lake
ff.		Direction of the sun or prevailing wind
gg.		Familiarity with site from past
hh.		Other_____

20. Using only the nine (9) items you checked in Question 19 above, select the five (5) most important and write the letter of those below in their order of importance (with 1 being the most important). Then, on the scale to the right, indicate by a check (✓) to what degree this campsite satisfied each of these.

	EXCELLENT	BETTER THAN AVERAGE	AVERAGE	POORER THAN AVERAGE	NOT AT ALL
(1)_____					
(2)_____					
(3)_____					
(4)_____					
(5)_____					

21. Are there any reasons that would cause you to not select this campsite in the future? (CIRCLE ONE)

YES NO

If yes, please list those reasons in order of importance, with 1 being the most important reason.

(1)_____

(2)_____

(3)_____

(4)_____

(5)_____

22. Did you consider any other campsite in this park before you selected this one? (CIRCLE ONE)

YES NO

If yes, why did you select this campsite instead of the others you considered in this park?_____

_____

23. Would any of the following park features discourage you from selecting ANY campsite if they occurred between that campsite and the lake? (CIRCLE ONE ANSWER TO THE RIGHT OF EACH ITEM)

Main park roads	YES	NO	DON'T KNOW
Circulation (campsite) roads	YES	NO	DON'T KNOW
Other campsites	YES	NO	DON'T KNOW
Cliffs	YES	NO	DON'T KNOW
Steep terrain	YES	NO	DON'T KNOW
Deep woods	YES	NO	DON'T KNOW
Gullies	YES	NO	DON'T KNOW
Marina or store	YES	NO	DON'T KNOW
Other buildings	YES	NO	DON'T KNOW
Parking lot	YES	NO	DON'T KNOW
Other (specify)_____	YES	NO	DON'T KNOW
_____	YES	NO	DON'T KNOW

24. Would any of the following park features discourage you from selecting ANY campsite if they occurred between that campsite and the restroom?
(CIRCLE ONE ANSWER TO THE RIGHT OF EACH ITEM)

Main park roads	YES	NO	DON'T KNOW
Circulation (campsite) roads	YES	NO	DON'T KNOW
Other campsites	YES	NO	DON'T KNOW
Steep terrain	YES	NO	DON'T KNOW
Deep woods	YES	NO	DON'T KNOW
Gullies	YES	NO	DON'T KNOW
Other buildings	YES	NO	DON'T KNOW
Other (specify)_____	YES	NO	DON'T KNOW
_____	YES	NO	DON'T KNOW

THIS IS THE END OF THE QUESTIONNAIRE. THANK YOU FOR YOUR PARTICIPATION.

END

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